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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/789,390

02/27/2004

Robert Joseph Crowley

RJC-5

4935

7590

04/11/2006

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Manchester, MA 01944

EXAMINER

LEE, JOHN D

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/789,390

Applicant(s)

CROWLEY, ROBERT JOSEPH

Examiner

John D. Lee

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19-57 is/are pending in the application.
- 4a) Of the above claim(s) 19-31 and 41-57 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32-40 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 19-57 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Applicant's election with traverse of Invention Group III (claims 32-40) in the reply submitted on March 10, 2006 is acknowledged. The traversal is on the ground(s) that the methods of Groups I and III do not involve different functions and thus do not represent distinct inventions. This is not found persuasive because switching inherently involves a decision making process (i.e. through an analysis of some parameter, deciding the particular routing of a signal), whereas electrostatic moving does not involve such decision making process. While electrostatically-created movement may be one means of effectuating switching, they do not involve the same function. The inventions are, indeed, distinct as set forth in the previous Office action.

The requirement is still deemed proper and is therefore made **FINAL**.

Claims 19-31 and 41-57 stand withdrawn from further consideration by the Examiner, 37 CFR § 1.142(b), as being drawn to a non-elected invention.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed (i.e. a method of moving a carbon nanotube).

The abstract of the disclosure is objected to because it is not directed to the invention that is being claimed in this divisional application (i.e. a method of moving a carbon nanotube). Correction is required. See MPEP § 608.01(b).

The four (4) sheets of drawing that are now present in this application are acceptable.

Claims 32-40 are allowed. After a thorough search of the prior art, the Examiner believes that the documents listed on the accompanying form PTO-892 represent the

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most closely related art to the claimed method of electrostatically moving a carbon nanotube. It is noted, however, that none of the related prior art bears a date prior to applicant's priority date of January 16, 1997. It therefore appears that applicant is indeed the first inventor of the claimed subject matter.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited U.S. Patents 6,038,060 to Crowley, 6,258,401 to Crowley, and 6,700,550 to Crowley are patents which have matured from parent applications of the present U.S. Application. These patents thus represent applicant's own work. Cited U.S. Patents 6,669,256 to Nakayama et al, 6,802,549 to Nakayama et al, and 6,805,390 to Nakayama et al all disclose "nanotweezers" which employ carbon nanotube movement in a manner like that of applicant's claims. These documents, however, do not antedate applicant's earliest priority date of January 16, 1997, and are thus not usable in any prior art rejection against applicant's claims. The SCIENCE article by Poncharal et al similarly was published after applicant's earliest priority date of January 16, 1997, and is not usable in any prior art rejection against applicant's claims.

In addition, all of the prior art documents made of record during the prosecution of parent application Serial Number 08/988,801 (now U.S. Patent 6,038,060) have been considered by the Examiner herein. If applicant wishes any or all of these documents to be made of record in the present application, a properly completed form PTO-1449 should be submitted.

This application is in condition for allowance except for the following formal matters: the objections to the title and abstract as set forth above. In addition note the

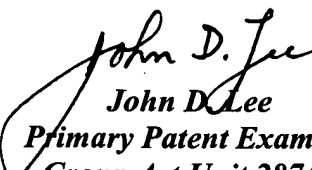
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presence of claims 19-31 and 41-57 directed to an invention non-elected with traverse in the reply submitted on March 10, 2006. Applicant must cancel the noted claims or take other appropriate action (37 CFR § 1.144).

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO (2) MONTHS** from the mailing date of this letter.

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (571) 272-2351. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562, to the technical support staff supervisor (Team 8) at telephone number (571) 272-1564, or to the Technology Center 2800 Customer Service Office at telephone number (571) 272-1626.

  
**John D. Lee**  
**Primary Patent Examiner**  
**Group Art Unit 2874**